

## FORMWORK METALLIC WITH ACCESSORIES FOR MOLDING IN CONCRETE



## FIELD OF THE INVENTION

The present invention relates to a formwork metallic for the molding in concrete in construction works and substructure. The invention is easy handling for uses numerous, with characteristic modular to facilitate the connection the connection between them by means accessories metallic. These

10 formworks metallic are modules which form steel sheets with reinforcements and in size according the requirements in work.

This formworks by its vicinity them, gives the form to  
15 concrete, specially walls and partition walls.

The formwork is made in steel sheet (2 to 3 mm thick) and the modules formed can have a weight to 43 kg (60 x 240 cm) and dimensions which varies from 5 to 80 cm in wide and from 20

20 to 240cm in height, with increasing scales of 5 cm in the measures.

## BRIEF DESCRIPTION OF THE DRAWING

25 The characteristic and advantages in the formwork of the present invention appear more clearly on reading the following description given by away of non limiting indication and made with reference to the accompanying  
30 drawings, in which

Figure 1 presents a module metallic, basic for the formwork of the invention:

Figure 2 is an accessory angular metallic shaped in L, which enables the external turn between adjacent modules;

Figure 3 is an accessory, or named corner cupboard type box  
5 to enables the internal turn between adjacent modules;

Figure 4 (a-e) present a kit accessories metallic used in the building of formwork, which comprises: sheets, press with grips, cotter pins, distancing and arrangers, and;

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Figure 5 is an example of modules formwork in parallel vicinity with some accessories form assembly.

Figure 1 shows a formwork metallic, which comprises a frame  
15 10 made is steel sheet 11 with shape rectangular and measures according the requirements, said sheet surrounded in its length by a metallic members longitudinal or props 12, and across the same close-props 13 width-ways with the end edges connection, which has a cuts angular (see fig. 5 detail A).

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Each member or prop 12 which surrounds the sheet 11 has in the length holes 14 spaced equidistant. The plane surface sheet 10 is reinforced with metallic elements 15 with profile in V, and in the wide has a reinforcements or struts 16  
25 perpendiculars to previous. The module or formwork couples or splice with others similar through an angular profile 17 (fig. 2), which acts like a coupling module to enable the external turn with the module adjacent 10' (see fig. 1).

30 The angle 17 has the same length as module 10 and comprises holes in his faces. The modules (formworks) keeps during installation a distance parallel with other module, where

said space enables to empty the concrete to form the wall or partition walls in the respective building.

Other elements to couple is the named corner cupboard module,

5 type box 28 (fig. 3), which is a metallic frame that enables the internal turn in modules adjacent. This module 28 has a metallic wall 29 and 30, drilled to facilitate the passage of pins or sheet points, so will see therefore.

10 The coupling between adjacent modules (fig. 5) is made through an element form linkage named distancing or "tie" 18 (fig. 4 c); said tie is a sheet metallic from 5 to 120 cm, bored in its ends with holes 10 (10 mm diameter) to enable the coupling tight of an element like a hook or scoter pin 20

15 (fig. 4 b), which presents as shaped in rod with an angular folding. This "tie" or distancing regulates the space between two modules with parallel vicinity, through a space "e" (fig. 5), filled with the concrete.

20 When two modules are installed, it's proceeded to an alignment to provide verticality them and structural stiffness, through an element to align 21 (fig. 4 d), said element 21 comprises a metallic profile shape in U with variable length, which is fixed in the formwork is wide with

25 a press with grips 22 (fig. 4 e), said press having a screw 23 with hand pushing to press the free plane of distancing against a metallic hooks or grappling iron 24, folded to enable it penetration and fixing in the holes 14 in the frame of formworks.

30 The linkage between modules, it's complemented through linkage elements or sheets 25 (fig. 4 a) which comprises a

platen 26 with a slot axial and a folding in angle and a rod welded 27 with an end folded in order to penetrate the holes in the formwork's edges.

5 An element placed in the corners in the module or formwork, type sure plate, welded there, enables the passage to pin 20, so to assure the distancing or "tie" 18 to adjacent module.

10 The modules of the present invention can be installed in order the following prescriptions:

- a) To apply the demoulding material to modules,
- b) Star the timbering of formwork according the modulation in each work or building,
- 15 c) To install an fix the external linkage angle 17 to adjacent modules,
- d) To install sheets 25 in the holes, fixing the solot of platen 26 and the point of rod 26 in said holes,
- e) To install the distancing or tie 18, fixing the parallel
- 20 modules through the hole 19 in said sheet with the scooter pin 20 on the sure plate 30 in each module's corner,
- f) Adjust the element to align 21 through the press 22 of compare the verticality and alignment before to empty the concrete.

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The face smooth in the formwork is coated with substance for removing the timbering before to empty the concrete, to avoid the adherence of said concrete in the formwork. This coat is washed with pressure when the empty is finished.

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The stuffiness in the formwork is secured by means of cotter pins for the distancing and sheets in the holes in the frame

of module. This module was making in sizes of 240cm in length and wide from 5 to 80cm. The corner cupboard has from 20 to 240cm in length at same the angles for external turn.

- 5 The weight of module according the measures selected varies from 3kg (5 x 120 cm) to 43kg (60 x 240cm).

#### A ADVANTAGE

- 10 An advantage of present invention is the low weight and easy use, and transport. Since the basic module don't exceeds the 25kg although modules with 240 x 60cm can weigh 43kg, factor easy usable for any worker.
- 15 The module provides a smooth finished or textured of concrete in view.

Can be built the name "irregular modules" in sizes when the circumstances it required.

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Manual installation without need of crane towers.

Easy transport to work or building given it form as boxes.

- 25 Drawing according regulation seismic NSR-98.

Avoid waste or scraps and rubbles.

- 30 The employees enable the control of tools and materials in work.

To enable the reuse, given the characteristic metallic..

Cheap manufacturing costs.

Uses versatile to built homes or public works.

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The formwork is washable after empty and removed from wall.

The formwork is storable with in small space.